

Moving Forward TAMP

with

Asset Management – Risk Management
October 28, 2021

What is TAMP?

- Risk-based transportation asset management plan
- Mandated by Map-21 and FAST Act
- Initial processes certified in 2018, final processes certified in 2019
- Implementation certified annually begin in 2019
- The TAMP in short: doing the right treatment on the right pavement or bridge at the right time to maximize conditions at the least cost.

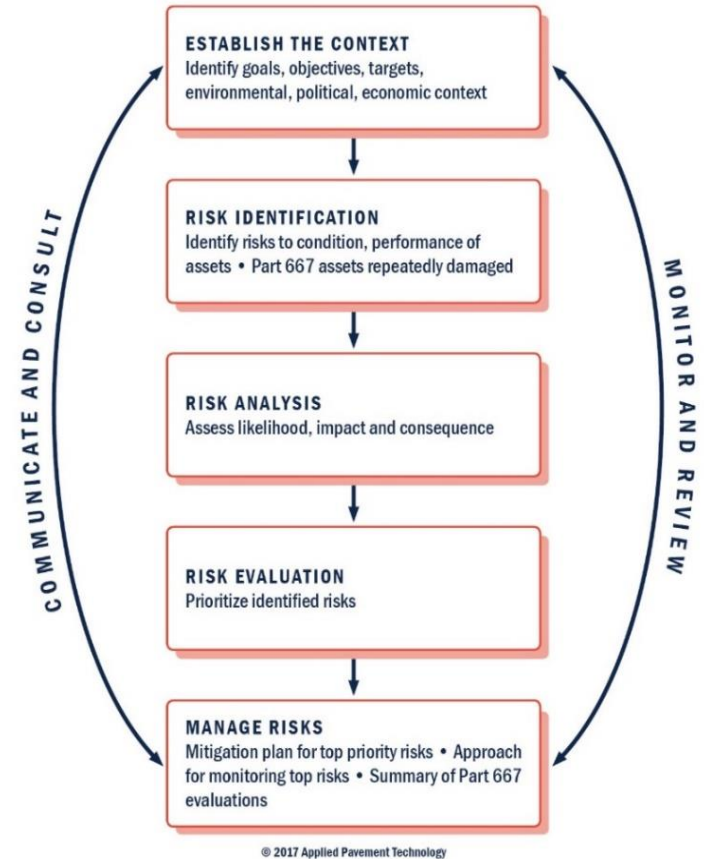
What is “Risk-Based” all about?

- In IDOT’s 2019 TAMP
 - Enterprise Risk Management
 - All-Hazards Asset Vulnerability Assessment
 - Locations Repeatedly Requiring Repair and Reconstruction Due to Emergency Events

ENTERPRISE RISK MANAGEMENT

Enterprise Risk Management

- General risks across the agency
- Based on ISO risk management framework
- Technical working group from multiple bureaus
- Developed risk registers



Risk Assessment

- Risk likelihood: what are the chances of the risk occurring?
- Consequence ratings: what happens if we don't mitigate the risk?

Likelihood Ratings	
Rating	Description
Rare	< 5% chance
Unlikely	5% to 20% chance
Possible	> 20% to 80% chance
Likely	> 80% to 95% chance
Almost Certain	> 95% chance

Consequence Ratings	
Rating	Description
Negligible	Won't impact objectives
Minor	Will meet objectives with slight difficulty
Major	Will barely meet objectives with significant difficulty
Critical	Will not adequately meet objectives
Catastrophic	Will prevent IDOT from achieving objectives

Risk Rating and Mitigation Strategies

Likelihood	Consequence				
	Negligible	Minor	Major	Critical	Catastrophic
Rare	Low	Low	Low	Low	Low
Unlikely	Low	Low	Low	Medium	Medium
Possible	Low	Low	Medium	High	High
Likely	Low	Medium	High	High	Critical
Almost Certain	Medium	Medium	High	Critical	Critical

- Risk matrix: what is the risk rating for the identified risk?
- Assigned mitigation strategies to risks that received “critical”, “high”, or “medium” risk ratings

Strategy	Definition
Treat	Seek to reduce the risk probability or impact by taking early action to reduce the occurrence of the risk to a feasible level. This enables the activity to continue, but with controls in place to maintain the risk at a tolerable level.
Tolerate	Take no additional steps other than the normal controls in the current business processes.
Terminate	Change the project plan to eliminate the risk or to protect the project objectives from its impact. Stop the activity, process, or program.
Transfer	Move the consequence of a risk together with ownership of the response to a third party. Pass the risk to an insurer, outsource it, or transfer to another entity. Transferring the risk does not eliminate it.
Take Advantage of	Seek an opportunity to exploit a positive impact.

Example of High Risks

Risk Event	Primary Impacts	Likelihood	Impact	Risk Rating	Mitigation Strategies
Agency Risks					
Reduced levels of federal funding	<ul style="list-style-type: none"> Not allow IDOT to invest to meet performance targets (pavement and bridge performance) Reduces the asset level 				
Decrease in the level of state revenue available	<ul style="list-style-type: none"> Not allow IDOT to invest to meet performance targets Reduces the asset LOS Difficulty in meeting federal requirements 				
Program Risks					
The federal focus on the NHS will impact IDOT's flexibility in using federal funds	<ul style="list-style-type: none"> The LOS for non-NHS deteriorate further Political pressure for increased funding could increase Increase the ability to meet performance targets for non-SOV travel 				
Data accuracy and consistency issues	<ul style="list-style-type: none"> The wrong solution is implemented or recommended May impede the ability to meet performance targets 				
Asset Risks					
Preservation activities are not performed on a timely basis	<ul style="list-style-type: none"> The expected service life of an asset is not achieved Repair costs increase due to a lack of maintenance May impede the ability to meet the performance targets 	Almost Certain	Major	High	Treat – review and enhance guidance on preservation; increase investment in preservation
Increases in illegal or oversized/overweight vehicles	<ul style="list-style-type: none"> The rate of pavement and bridge deterioration increases, leading to the need for more frequent treatments or repairs The expected life of an asset is not achieved, increasing the overall cost of preserving the system May impede the ability to meet the performance targets 	Likely	Major	High	Transfer – increase enforcement; Treat – identify priority corridors for oversized/overweight vehicles; increase permit fees

Agency Risks

Program Risks

Asset Risks

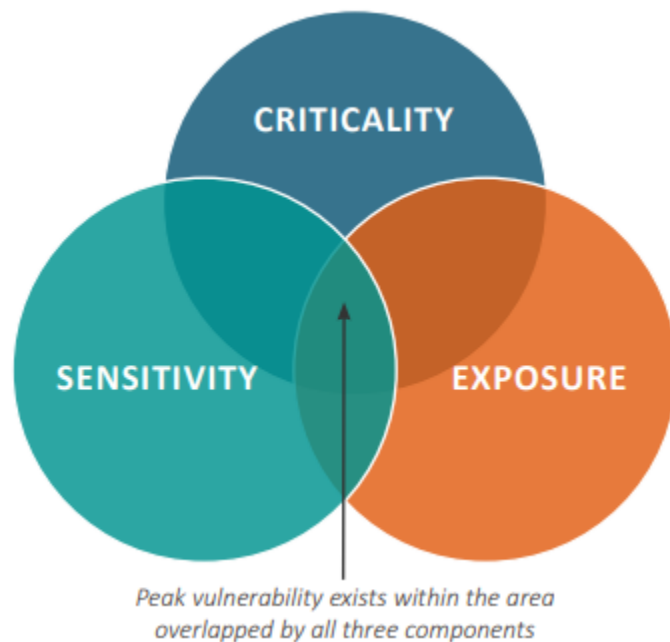
ALL-HAZARDS ASSET VULNERABILITY ASSESSMENT

All-Hazards Study

- Evaluated transportation system for vulnerability to manmade events and naturally-occurring extreme events caused by:
 - Precipitation
 - Temperature
 - Wind
 - Geologic factors



All-Hazards Study



- Assessed criticality, sensitivity, and exposure for each asset to develop vulnerability index
- Data incorporated into Enterprise Asset Management System
- Risk analysis will be a component of prioritization methodology

EMERGENCY EVENTS

Emergency Events

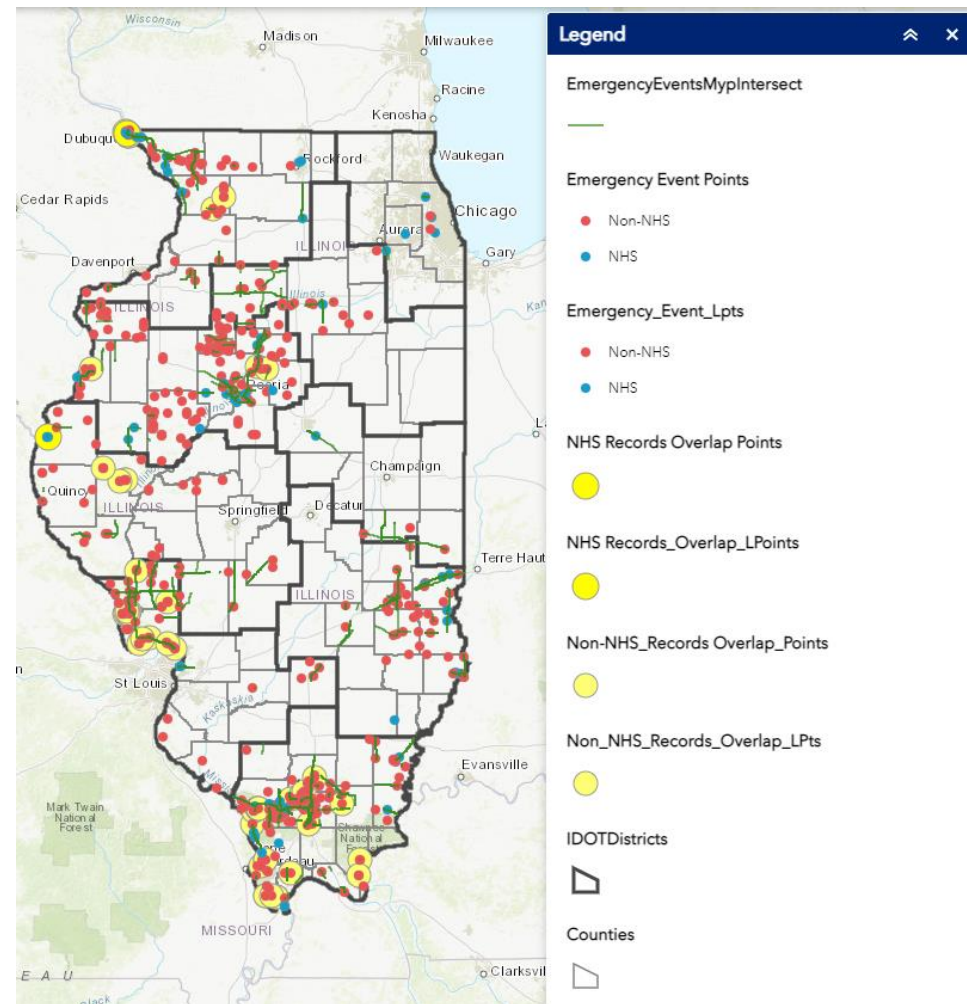
- Required to track by FAST Act
- Damage to an asset 2 or more times due to a *declared* emergency
- Goal is to fix recurring problems permanently to prevent future issues



IL 78 Wolf Lake near Chandlerville 1943

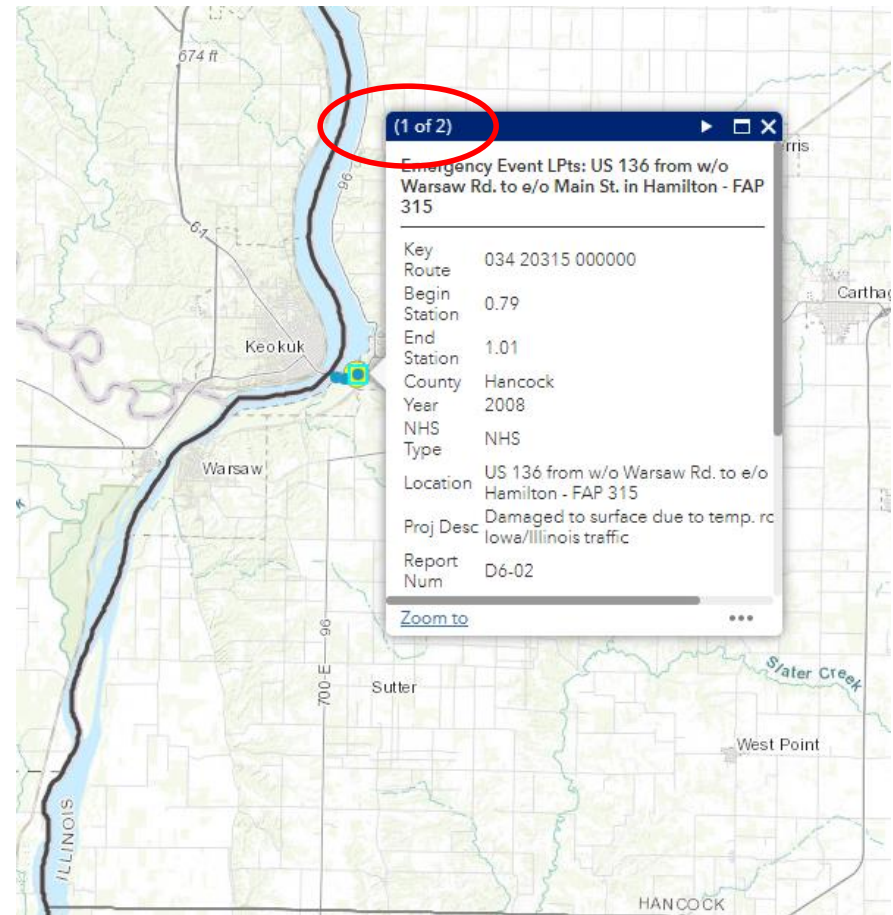
Statewide Map

- Accumulated data back to 1997
- Application in GIS has been distributed to all districts



Closeup Map

- Includes location information, description of damage, year of emergency event
- Locations damaged more than once are highlighted yellow
- Number of records will show at top of information pane



Emergency Events Chapter in Programming Guidelines

- Check the map to see if there has been damage due to an emergency event on **EVERY** project in the MYP, including local projects
- If two or more emergency events have occurred on one project, check the check box in PPS
- Evaluate the location as follows

Project Evaluation

- Determine root cause
- Determine overall risk rating
- District will develop a recommended plan of action (mitigation, partial mitigation, no mitigation)
- Information will be submitted to District Programming (State jurisdiction) or Local Roads (local jurisdiction)

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- Risk matrix: what is the risk rating for the identified risk?

Evaluation of Treatment Alternatives

- If risk rating is medium, high, or critical, mitigation strategies **MUST** be developed
- Work with Studies & Plans and/or Local Roads (if local project)
- Evaluation **MUST** be retained in an easily-accessible location for periodic FHWA reviews

What's Next for TAMP?

- TAMP must be updated every 4 years, so updating in 2022
- Implementation of EAMS in early 2022
- Updating risk registers and mitigations

QUESTIONS?

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Forward with
TAMP